

Appl. No. 10/712,471
Amdt. Dated May 25, 2006
Reply to Office Action of March 28, 2006

AMENDMENTS TO THE SPECIFICATION

Please replace paragraphs [0033] through [0035] with the following amended paragraphs:

[0033] In the switch 204 of this third embodiment, the first 206 and second 208 contacts are disposed adjacent one another. However, neither switch contact 206, 208 at least partially surrounds the other switch contact 208, 206. Instead, the first 206 and second 208 contacts are each preferably configured as a plate. The first contact 206 is coupled to the heat pipe condenser end 1110, and the second contact 208 is coupled to a heat sink, such as the chassis 102. The switch 204 in the third embodiment additionally includes a ~~tendon~~ link 602 that is coupled between the first contact 206 and another structure such as, for example, the chassis 102. The ~~tendon~~ link 602 is preferably constructed, at least in part, of a shape memory metal or metal alloy. The first 206 and second 208 contacts may also be constructed, at least in part, of either a shape memory metal or metal alloy or a non-shape memory metal or metal alloy having good heat transfer characteristics. In a particular preferred embodiment, the first 206 and second 208 contacts are constructed of metal having good heat transfer characteristics such as, for example, aluminum or copper.

[0034] With the passive thermal switch 600 of FIGS. 6 and 7, when the circuit components 104 are at or below a predetermined temperature, such as during a cold startup, the switch 204 is configured such that the first 206 and second 208 switch contacts are thermally decoupled from one another. As such, the heat pipe 202 is thermally decoupled from the heat sink, and the circuit components 104 will begin heating up. As the circuit components 104 heat up, heat is transferred to the heat pipe 202, and from the heat pipe 202 to the first contact 206 and the ~~tendon~~ link 602. This, in turn, causes the ~~tendon~~ link 602 to heat up and begin changing its shape in a manner that the ~~tendon~~ link 602 begins contracting, and moving the first contact 206 toward the second contact 208. When the circuit components 104 reach the normal operating range, the ~~tendon~~ link 602 preferably reaches a temperature at which its shape is changed sufficiently to cause it to move the first contact 206 into engagement with, and thereby be thermally coupled to, the second contact 208. With the first 206 and second 208 contacts thermally coupled together, heat is efficiently transferred from the circuit components 104 to the

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chassis 102 (or other heat sink). As with the prior embodiments the switch 204 in this third embodiment may be implemented as either a normally open switch, or a normally closed switch.

[0035] The passive thermal switch 600 shown in FIGS. 6 and 7, and described above, is configured such that the ~~tendon~~ link 602 pulls the first 206 and second 208 contacts together as circuit component temperature increases. In another embodiment, which is shown in FIG. 8 and 9, the switch 204 is configured such that the switch contacts 206, 208 are pushed together. This passive thermal switch 800 is similar to the one shown in FIGS. 6 and 7, in that the switch 204 includes first 206 and second 208 contacts that are disposed adjacent one another, and are configured as a plate. The first contact 206 is coupled to the heat pipe condenser end 1110, and the second contact 208 is coupled to a heat sink, such as the chassis 102.